

What is claimed is:

1. A multilayer RF module, comprising:
 - a plurality of vertically stacked ceramic layers
 - 5 including a first to a third ceramic layers,
 - wherein each of the first and the third ceramic layers has a circuit component thereon and the second ceramic layer is located between the first and the third ceramic layers and is provided with at least one or more air cavities
 - 10 filled with air, the air cavities being vertically aligned with the circuit components of the first and the third ceramic layers.
2. The multilayer RF module of claim 1, wherein the air
15 cavities have a cylindrical shape.
3. The multilayer RF module of claim 2, wherein the air cavities have a diameter smaller than 100 to 500 μm .
- 20 4. The multilayer RF module of claim 1, wherein the circuit component is a metal pattern.
5. A method for fabricating a multilayer RF module, comprising the steps of:
 - 25 preparing at least three green sheets;
 - forming at least one air cavity on one of said at

least three green sheets;

forming a circuit components on each of two remaining green sheets;

stacking said at least three green sheets to thereby 5 form a laminated green sheet structure, wherein the air cavity is located between the circuit components on said two remaining green sheets; and

pressing and sintering the laminated green sheet structure.

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6. The method for fabricating a multilayer RF module of claim 5, wherein said at least one air cavity has a cylindrical shape.

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7. The method for fabricating a multilayer RF module of claim 6, wherein the air cavity has a diameter smaller than about 100 to 500 μm .

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8. The method for fabricating a multilayer RF module of claim 5, wherein the laminated green sheet structure pressing step is carried out at a temperature of about 70 °C and at a pressure of about 2500 - 2700 psi for about 10 min.

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9. The method for fabricating a multilayer RF module of claim 5, wherein the circuit component is a metal pattern.